

BOWEN-LEBUS ANCHOR WASHPIPE SPEARS

Instruction Manual 2900



Bowen-Lebus Anchor Washpipe Spears

One Company Unlimited Solutions



NATIONAL OILWELL VARCO

Anchor Washpipe Spears

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The designs and specifications for the tools described in this instruction manual were in effect at the time this manual was approved for printing. National Oilwell Varco, whose policy is one of continuous improvement, reserves the right to discontinue models at any time, or to change designs and specifications without notice or without incurring obligation.

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General Description

The **Bowen-Lebus Anchor Washpipe Spear** is specifically designed for the purpose of aiding in washing over and retrieving stuck drill stem, when stuck off bottom, with safety to prevent the dropping of the washed over and freed fish. This can be accomplished in a single round trip, thus effecting a considerable time saving.

The Bowen-Lebus Anchor Washpipe Spear when in service is always in position to automatically catch the fish off bottom, when being run into the well, while being raised or lowered to make kelly connections, or when coming out of the hole.

The Bowen-Lebus Anchor Washpipe Spear is one of the most versatile tools ever designed for washover fishing operations. The method of anchoring this Spear inside the washpipe is to expand the catching slips with a threaded tapered cone and without using a special landing collar or nipple for making connection with the fish.

When the Washpipe Spear is anchored properly inside the Washpipe, it will not release due to rotation of the washpipe and Spear. Neither will it release by the application of any amount of weight applied against the Spear slips while being lowered into the well, but only after the operator has connected onto the fish by right-hand rotation where this is required. After connecting onto the fish by right-hand rotation, the slips of the Washpipe Spear may be released by continued right-hand rotation and tension load on the washpipe string. If the washover starts as soon as the washpipe will turn over the spear, the slips will drag, causing excessive wear on the slips.

Use

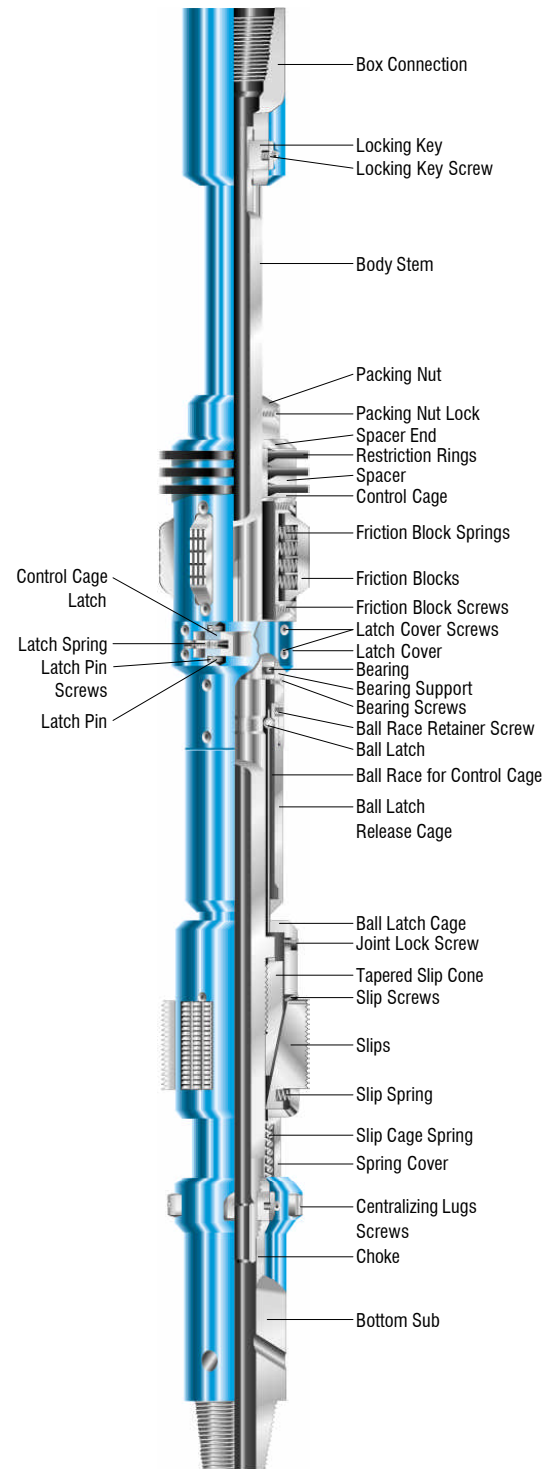
The Bowen-Lebus Anchor Washpipe Spear is designed to be run inside washover pipe. It engages the Fish at its lower end, usually by a threaded connection, preventing the fish from dropping to the bottom when it is washed loose. The Anchor Washpipe Spear will recover drill pipe, drill collars, packers, bridge plugs, etc., that are to be washed over, either off bottom or on bottom, and bring the fish out of the hole, inside the washpipe, after it has been washed loose. This saves additional trips with the fishing string.

Fishing Spears, taper taps or other applicable fishing tools may be run on the Anchor Washpipe Spear to engage the fish.

The Bowen-Lebus Unlatching Joint should always be run between the Washpipe Spear and the fish.

When the Bowen-Lebus Anchor Washpipe Spear is not available, various methods are attempted for the release of a stuck drill stem. Among these are: mixing oil in the drilling mud, inserting jars and bumper subs in the string, using explosives in the string, and as a last resort, washing over.

By using the Bowen-Lebus Anchor Washpipe Spear, washing over need no longer be considered as a last resort.



Bowen-Lebus Anchor Washpipe Spear

Construction

The Bowen-Lebus Anchor Washpipe Spear consists essentially of a Head, Body Stem, Control Cage, Restriction Rings, Slips, Friction Blocks, Choke, Ball Latch, Slip Cone, Ball Latch Cage, Centralizing Lugs and Bottom Sub.

The parts that comprise the Bowen-Lebus Anchor Washpipe Spear are manufactured from carefully selected, high grade alloy steel, fully heat treated to obtain the best quality of operation and long life.

The Bowen-Lebus Anchor Washpipe Spear is available in all drill pipe sizes from 2 3/8" A.P.I. Regular 3 1/4" O.D. through 5 1/2" A.P.I. Regular 8 1/4" O.D., inclusive.

These tools may be dressed with oversize Slips, Restriction Rings, Friction Blocks and Centralizer Lugs, to allow operation in larger sizes than the size for which the tool was designed.

Each Slip (part 12) is marked with the size range of washpipe inside diameter in which it is used.

Restriction Ring (part 4) should be 1/16" smaller than the inside diameter of the washpipe in which they are used.

The Friction Blocks (part 5) are marked with size numbers which match the size number marked on the Slips.

Centralizer Lugs (part 14-A) are marked with the size number to indicate the inside diameter in which they are used.

All oversize parts may be changed without completely disassembling the Washpipe Spear.

Critical Sizing

In the larger three sizes JCF-27, JCF-28 and JCF-29, it is important to use a choke (part 15) which has less area than exists between the washpipe and drill collars, or the area between the washpipe and well bore, being certain it is small enough for the rig mud pump to provide adequate fluid to operate the restriction rings.

Operation

Assembly of the Washpipe Spear

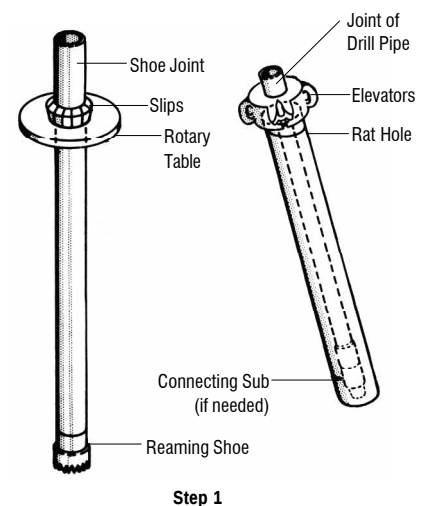
The Anchor Washpipe Spear should be assembled and thoroughly checked, making sure the appropriate choke is inside the spear, to match the pump size on the rig. Make up the appropriate fishing tool to the bottom of the Washpipe Spear. It is recommended that a Bowen-Lebus Unlatching Joint be run between the Anchor Washpipe Spear and the primary fishing tool at the bottom.

Assemble the Anchor Washpipe Spear in running position in the washover string as follows:

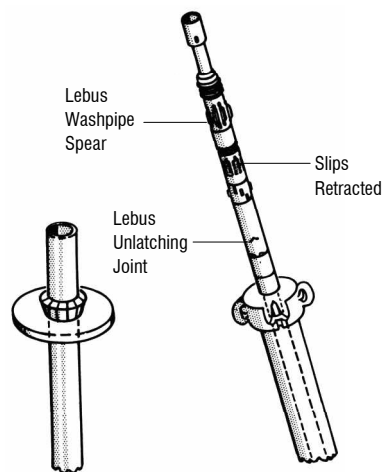
Lower the Washpipe down over the Washpipe Spear, then raise the washpipe so that the weight of the Washpipe Spear will set the Slips. While holding the washpipe, rotate the Bottom Sub to the right (clockwise). This will screw the Tapered Slip Cone down and wedge the Slips between the Tapered Slip Cone and the washpipe. Large tongs may then be used to set the Slips as tight as desired for making the subsequent connection between the Washpipe Spear and the fish.

If it is desired to anchor the Washpipe Spear comparatively high above the washover shoe, a joint of drill pipe may be connected between the Washpipe Spear and the primary fishing tools; and a joint of washpipe added below, before connecting the washover shoe.

The recommended best procedure for assembling the Bowen-Lebus Anchor Washpipe Spear, and anchoring it into the lower end of the second joint of washpipe is described below, and illustrated in the sequence of drawings labeled step 1 through step 5.

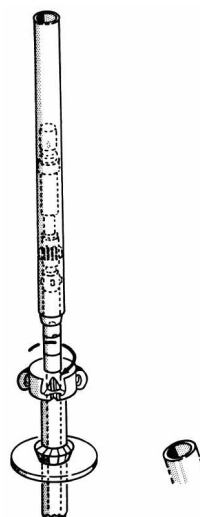


Step 1 illustrates the washover shoe joint, with the washover shoe made up ready to run, and set in the rotary table. A joint of drill pipe with a connecting sub (if required) with a total length of both being at least two or three feet shorter than the combined length of the shoe joint and shoe, is also desirable.



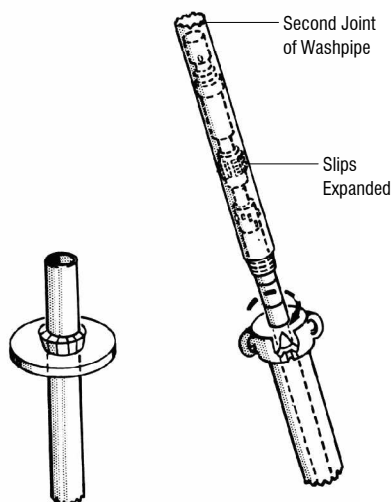
Step 2

Step 2 shows the Spear (and Unlatching Joint) made up tong-tight to the joint of drill pipe.



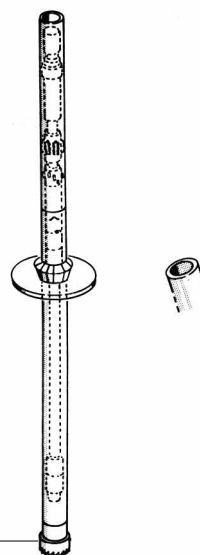
Step 4

Step 4 shows the same operation as Step 3, except that the joint of drill pipe is set in the elevators of the shoe joint in the well bore instead of in the rat hole.



Step 3

Step 3 illustrates the second joint of washpipe being placed over the Spear Assembly, and raised to set the Spear Slips to the inside wall of the washpipe. The joint of washpipe is then held inoperative while the lower pin connection of the Spear and joint of drill pipe are turned enough turns to anchor the Spear Slips, using large tongs (as shown by arrow).



Step 5

Step 5 illustrates the shoe joint and second joint of washpipe made tight. Sufficient additional washpipe has been added to complete the washover operation or any part thereof.

By using a joint of drill pipe below the Spear, the kelly can be used for making a connection to the fish; also after washing over is begun, the next joint and all additional joints of drill pipe can be added below the kelly without pulling the shoe off the top of the fish.

The joint will have lateral flexibility for ease in making a connection to the top of the fish.

The Bowen-Lebus Unlatching Joint may be run on the bottom of the joint of drill pipe, rather than on top if desired.

CAUTION: Always use the shortest possible string of washpipe required to complete the washover operation. In deep wells, it is better to plan several trips to washover and bring the stuck stem out in sections, rather than washover in one trip, with the attendant risk of sticking a long string of washpipe.

After the Anchor Washpipe Spear is assembled as described the Slips will keep the Spear securely anchored to the washpipe until the fish is contacted and engaged for pulling. Once the fish is tightly engaged, so that rotation is prevented, pressure from above or below the Washpipe Spear will not cause the slips to release from the washpipe. However, continued rotation will release the slips from the washpipe. Picking up additional right-hand rotation will clear the slips and prevent them from dragging in the washpipe. The Slips will then have the necessary operational free travel so that they are easily released into a catching position by a downward movement of the washpipe.

Washing Over

As washpipe is added to the washpipe string and the string is lowered, the Washpipe Spear remains anchored in the washpipe and will rotate with the string. Once the Washpipe Spear is firmly connected to the fish however, the washover string will rotate around and move down over the Washpipe Spear and fish which remain stationary. Only

the Control Assembly will rotate with the washpipe. The rest of the Washpipe Spear will remain securely connected to the fish.

During operation, when it becomes necessary to raise the Washpipe Spear to make a kelly connection or to free a tight washover shoe, the pump pressure should be increased to prevent the upward movement of the Control Assembly. The increase in pump pressure will push against the restriction rings, keeping the Friction Blocks from setting the Slips. If the washover shoe begins to stick, raise the pump pressure and lift the washpipe at least 36 inches (3 feet). Then lower the washpipe 18 inches to 24 inches before resuming rotation.

One of the principal features of the Bowen-Lebus Anchor Washpipe Spear, is that if the fish were to come loose while making a kelly connection, or during any up or down movement of the washpipe, the swabbing action of the Restriction Rings against the fluid column below and the friction blocks, would prevent the Control and Slip Assemblies from moving downward. Since the Body Stem Assembly and Tapered Cone would move down with the loosened and falling fish, the Slips would expand to catch the inside of the washpipe. The expanding action of the Slips will take place within a few inches of downward movement.

Where it is desired or necessary to recover the fish in sections, it is recommended that a string shot be used to loosen the washed-over portion and back it off. Due care must be exercised to assure that the string shot is not detonated in, or very near either the Washpipe Spear or other auxiliary tools such as jars or bumper subs, as serious damage to these tools would result.

A stripping job may be saved by setting the Anchor Washpipe Spear in the lower (or washover shoe) joint of Washpipe, when coming out of the hole with the Fish after a backoff. Normally, the only time the slips need be latched off to make them inoperative is after the fish has been raised to the rotary table by the Spear.

This is done by setting the washpipe in the rotary, picking up the drill pipe with the elevators and running it inside the washpipe. On contacting the top of the Spear, screw it in tightly enough to hold the fish. Pick up on the drill pipe a few inches and release the Spear. Next, rotate the drill pipe to the right until the Control Cage Latch dogs off in the Body Stem Slot. It will then be possible to lower the fish so that the Spear may again be set in the bottom (washover shoe) joint of washpipe, preventing having to strip off the washpipe.

On reaching the desired setting point, the drill pipe is rotated to the left one half turn to disengage the Control Latch and allow the slips to set in the washpipe. After setting the slips, additional left-hand rotation is taken, to back the drill pipe out of the Spear and bring out the balance of the washpipe, with the fish hanging in the bottom.

The operating drill pipe is connected tong tight, directly to the top of the Anchor Washpipe Spear. The top joint of the washpipe is set in the rotary table. The Body Stem and loosened fish are raised 12 inches to 18 inches, to release the slips. The drill pipe is then lowered 6 inches and turned to the right, to lock the control assembly. This operation holds the catching slips inoperative, and allows the Spear and fish to be lowered to the lower (washover shoe) joint of the washpipe.

The Slips are held in release position until the last joint of washpipe is reached. Left hand rotation of the drill pipe releases the latch. Further downward movement will cause the control assembly to set the Washpipe Spear Slips in the washpipe. The balance of the washpipe may then be removed without a costly stripping job.

The Bowen-Lebus Anchor Washpipe Spear may be re-anchored to the fish without the necessity of removing the washpipe from the well.

After a portion of the fish has been backed off, the washpipe may be set in the rotary table to allow the Spear and portion of the fish to be removed from the well. The tool may be latched off and lowered down into the washpipe on the end of a string of drill pipe.

A Bowen Safety joint should be run between the drill pipe and the top of the Anchor Washpipe Spear. After the Spear has been anchored securely in the bottom joint of washpipe by right-hand rotation, the presence of the Safety Joint allows the drill pipe to be removed from the Washpipe Spear by left-hand rotation. The washpipe and Washpipe Spear may be run back to the stuck fish top, and the Washpipe Spear connected to the fish.

This operation permits the removal of the backed-off section of the fish, without removing the washpipe from the well.

Before starting the operation, a new snap bar should be installed in the Unlatching Joint when this tool is used on bottom of the Anchor Washpipe Spear.

During operation, the latch locks the control assembly to the body stem to hold the slips retracted. The Slips will be in released position.

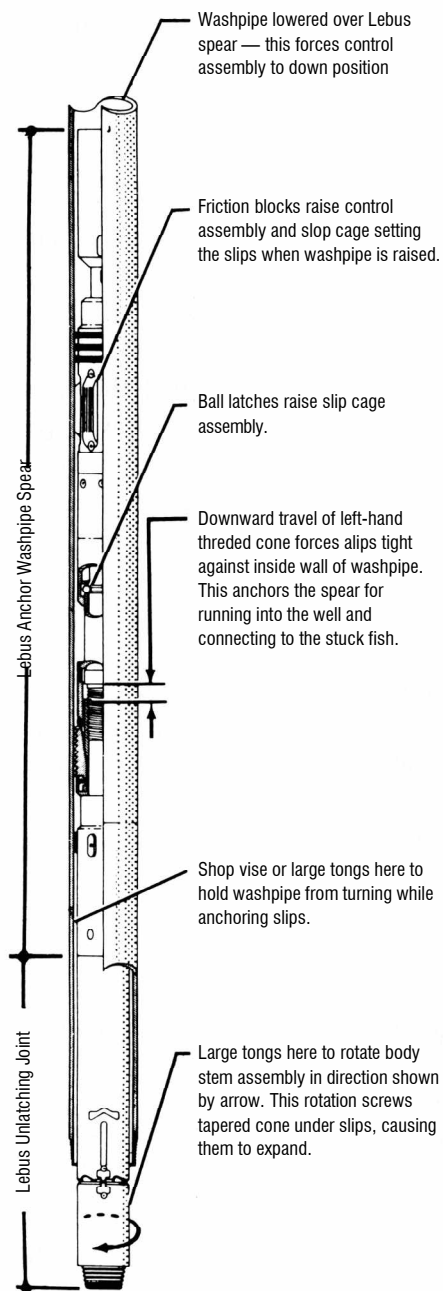


Figure 1
Anchoring Spear in the Washpipe
While in the Shop Vise
or Swinging in the Derrick

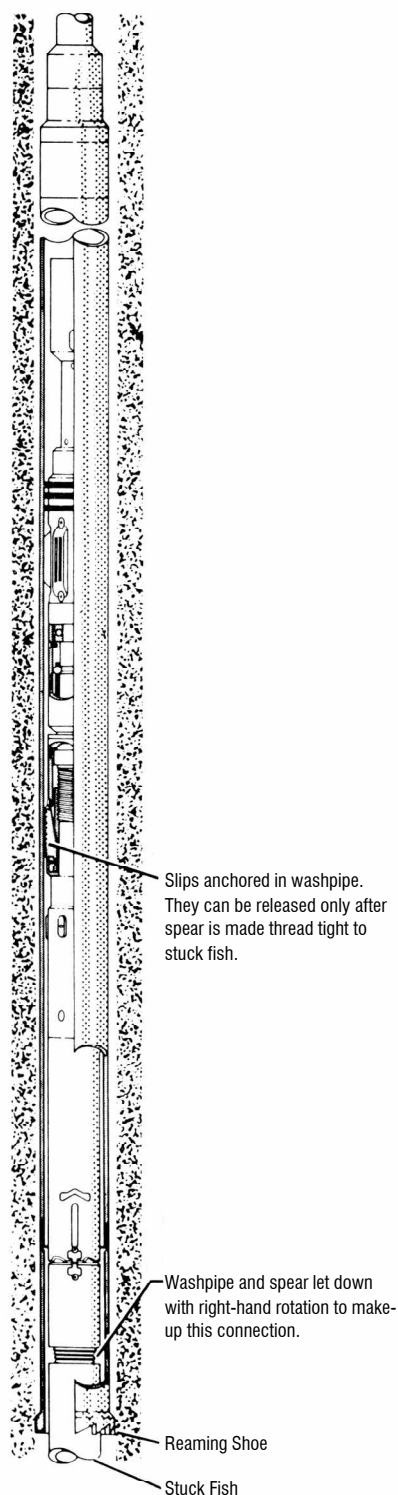


Figure 2
Connecting to Stuck Fish

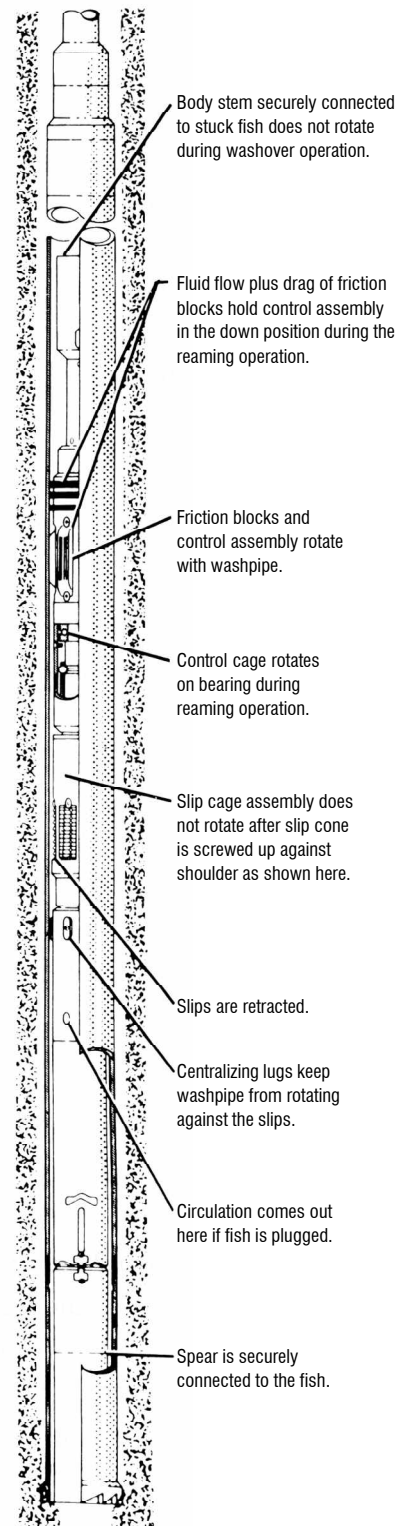


Figure 3
Reaming Over Fish

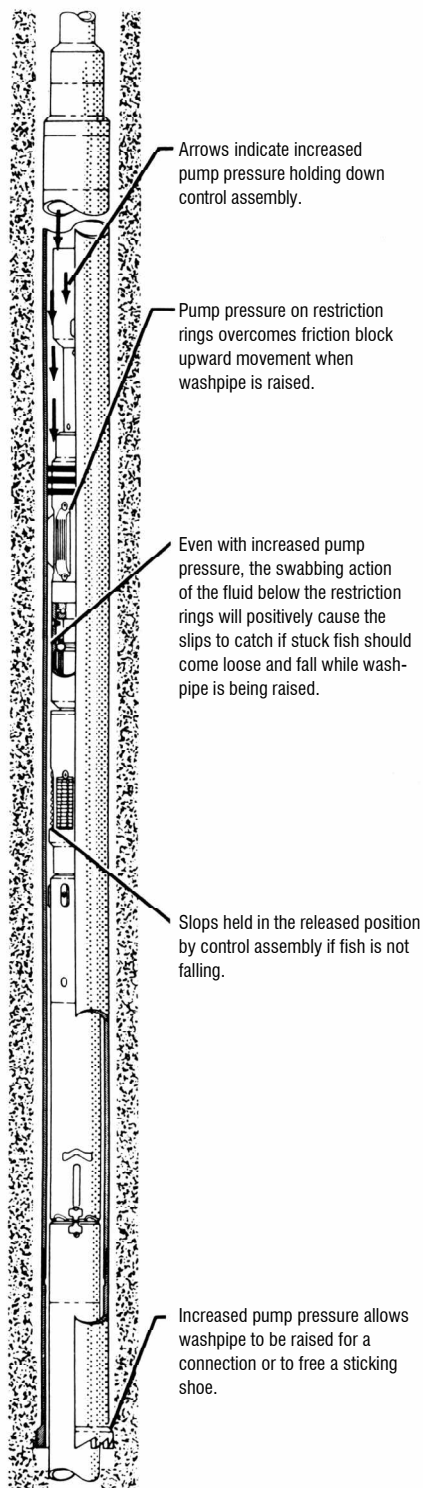


Figure 4
Raising Washpipe to Make Kelly Connection
or Free a Tight Reaming Shoe

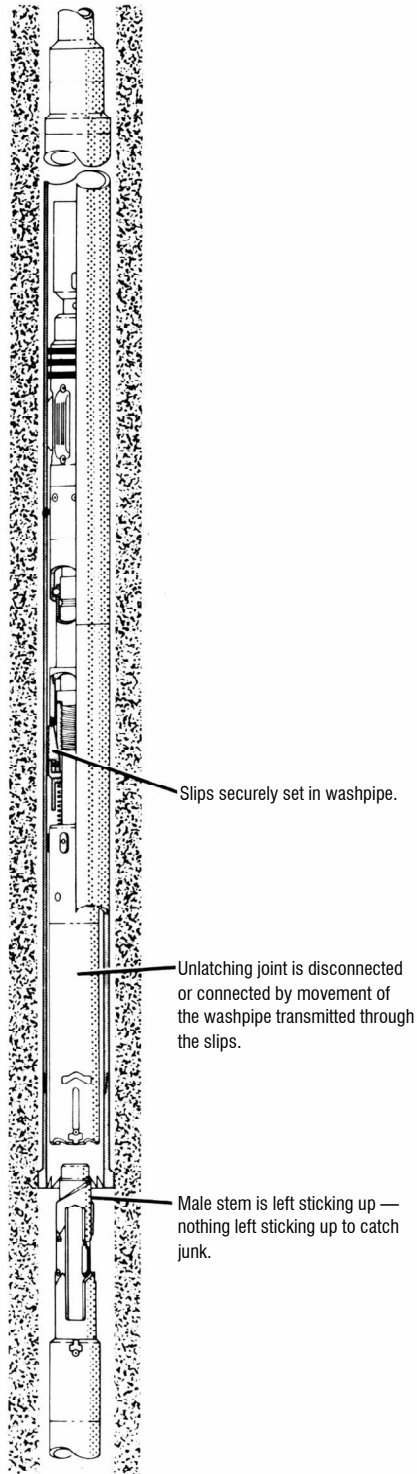


Figure 5
Operating the Unlatching Joint

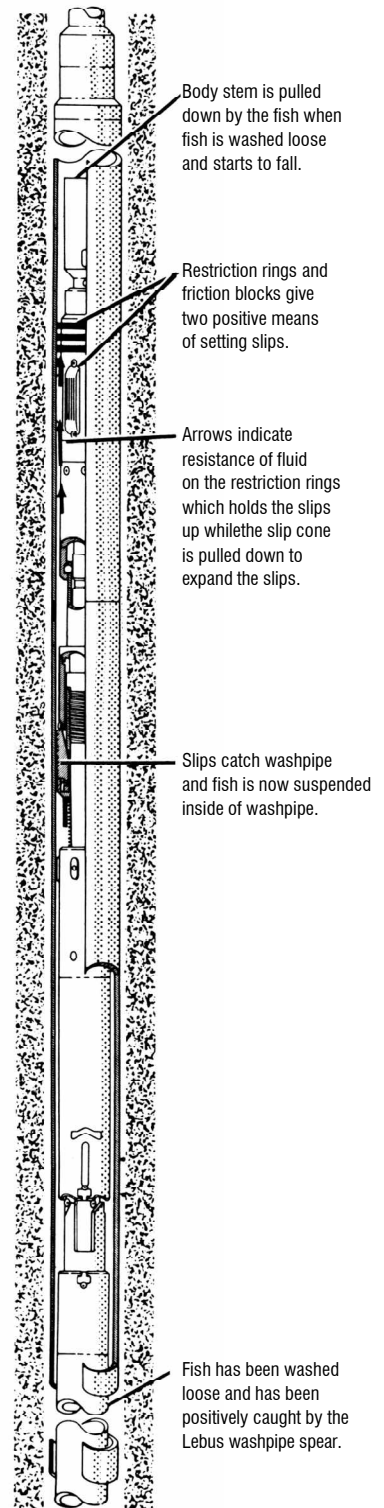


Figure 3
Reaming Over Fish

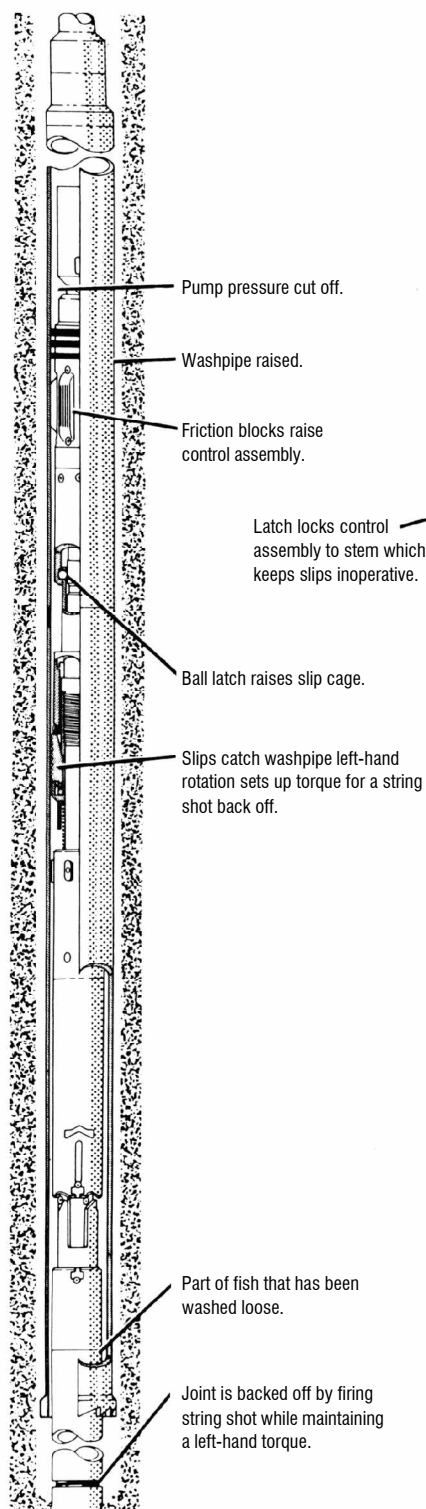


Figure 7
Backing Off Stuck Fish in Sections

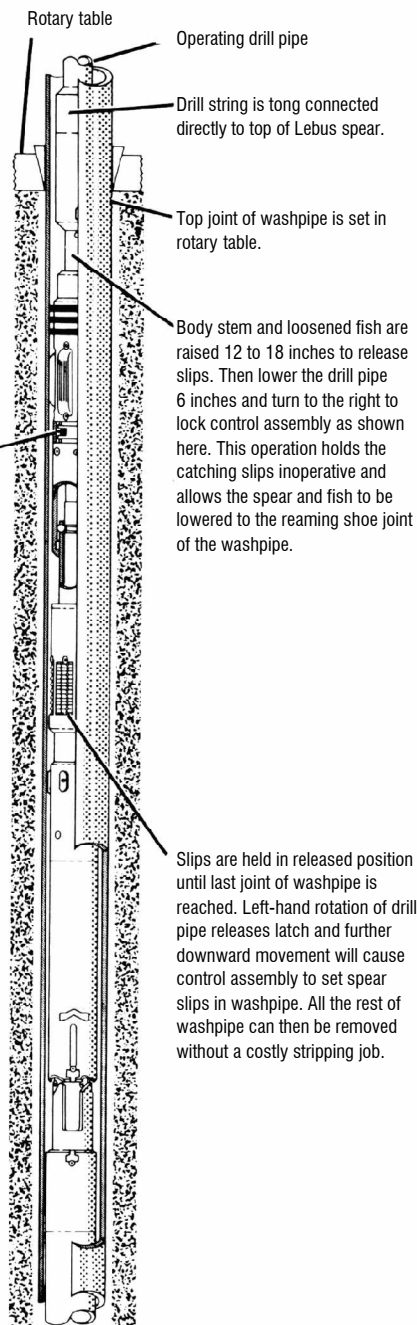


Figure 8
Save a Stripping Job

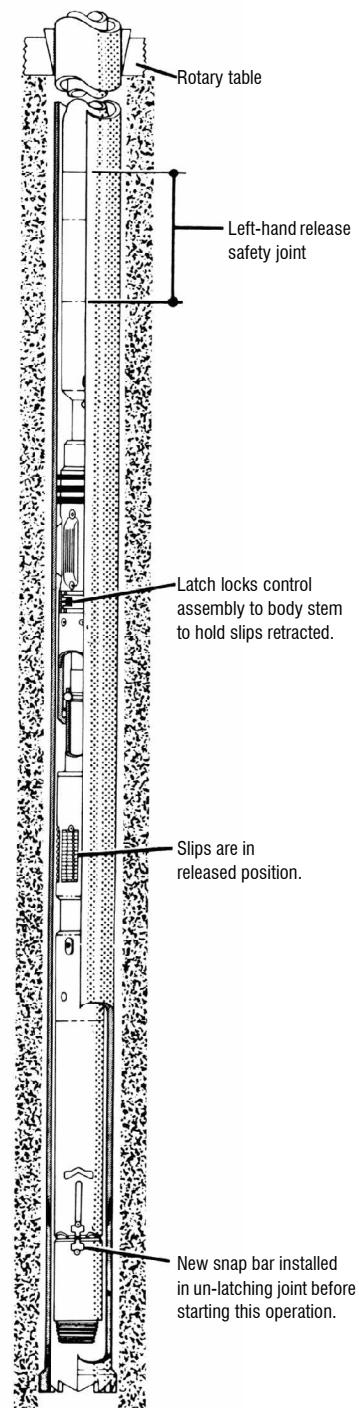


Figure 9
Re-anchoring Spear without Removing Washover Pipe from the Well

Maintenance

Maintenance of the Bowen-Lebus Anchor Washpipe Spear is confined primarily to disassembly, cleaning and re-assembly after long usage.

Complete Disassembly

The tool should be clamped horizontally in a vise. Clamp on the Body Stem, immediately below the Head. Proceed in removal of each part as follows:

1. Remove the Locking Key Screw.
2. Remove the Locking Key. This may best be done by inserting the Locking Key Puller Screw (Part F-50), and pulling on this screw with a pair of large pliers. (See Locking Key Puller page 11)
3. Loosen and remove the Head from the Body Stem.
4. Remove the bottom Sub Locking Key Screw and pull out the Locking Key.
5. Remove the Centralizing Lug Screws and Centralizing Lugs.
6. Unscrew and remove the Bottom Sub.
7. Remove the Choke from the lower end of the Body Stem.
8. Slide the Spring Cover and Slip Cage Spring off the Body Stem. Remove the Slip Cage Spring from the Spring Cover.
9. With a socket head wrench, remove the Packing Nut Lock Screw.
10. Hold the Control Cage with a pipe wrench, and remove the Packing Nut.
11. Slide the Restriction Rings, Spacer Centers and Spacer End off the Control Cage.
12. Remove the Friction Block Screws. There will be six or twelve of these depending on the size of the tool.
13. Remove the Friction Blocks and Friction Block Springs.
14. Remove the four Latch Cover Screws and Latch Cover.
15. Remove the two Latch Pin Screws and Latch Pin. Lift out of Latch.
16. Disengage and remove the Latch Spring.
17. Remove the Ball Race Retainer Screw.
18. Remove the six Bearing Screws.
19. Slide the Control Cage off the Body Stem.
20. Pull the Control Cage Ball Race and Bearing from the Control Cage.
21. Remove the six Slip Screws.
22. Lift out the six Slips and six Slip Springs.
23. Remove the Joint Lock Screw.
24. Unscrew and remove the Slip Cage from the lower end of the Body Stem.
25. Slide the Ball Latch Release Cage off the upper end of the Body Stem.
26. Unscrew and remove the Tapered Slip Cone from the Body Stem.
Note: This thread is a loose fitting left-hand-thread. The upper face of the Tapered Slip Cone has integral ball faces to assure that the Tapered Slip Cone will not seize against the shoulder of the Body Stem when it is "bottomed" against it during operation.

All parts should be thoroughly cleaned and examined for damage or advanced wear. Replace any worn or damaged parts. Oil or grease all parts before re-assembling.

Reassembly

Reassembly of the Bowen-Lebus Anchor Washpipe Spear should proceed as follows:

1. Clamp the Body Stem horizontally in a vise. Clamp immediately below the top thread area.
2. Screw the Tapered Slip Cone onto the low-end of the Body Stem, using left-hand rotation.
3. Slide the Slip Cage onto the lower end of the Body Stem, with the threaded end up (toward the Head).
4. Insert a Slip Spring into a Slip and depress the Spring while inserting the Slip into the Slip Cage. Repeat this with the remaining Slips.
5. Slide the Spring Cover onto the Body Stem with the shouldered end against the Slip Cage.
6. Insert the Slip Cage Spring into the Spring Cover.
7. Insert the Choke into the Body Stem lower end and tighten it. Caution: Make sure the choke opening is of the proper size required.
8. Screw the Bottom Sub onto the lower end of the Body Stem until the slot in the bottom Sub is completely aligned with the matching slot in the Body Stem.
9. Insert the Locking Key into the slot in the Bottom Sub and secure it in place with the Locking Key Screw.
10. Insert the Centralizing Lugs and secure them with the Screws.
11. Reclamp the tool on the Bottom Sub.

12. Slide the Ball Latch Cage over the upper end of the Body Stem with its threaded end toward the Slip Cage. Slide it down until the holes near the upper end are aligned with the shallow groove in the Body Stem. It will be necessary to make the thread up into the Slip Cage.
 13. Slide the Ball Latch Release Cage over the Body Stem with the threaded end up. Slide the Control Cage Ball Race onto the Body Stem with the grooved end up.
 14. Drop the Latch Balls into the holes in the Ball Latch Cage. Apply the Balls with heavy cup grease to keep them in position while the Ball Race is slid down over the Balls to maintain them.
 15. Drop the Bearing Support and Bearing into the Control Cage. Lock them into position with the Bearing Screws.
 16. Slide the Control Cage onto the Body Stem. Screw it onto the Ball Latch Release Cage.
 17. Insert the Ball Race Retainer Screw and tighten it into the groove in the Control Cage Ball Race.
 18. Insert the Latch Spring into the Control Cage Latch, and seat the Control Cage Latch in position in the Control Cage.
 19. Insert the Latch Pin through the Control Cage Latch and Latch Spring.
 20. Seat the Latch Cover in place and insert the four Latch Cover Screws.
 21. Seat the Friction Block Springs in the Friction Blocks and the Friction Blocks into the Control Cage. Nine to 24 of these springs are required, depending on size of the tool.
 22. Insert and tighten the Friction Block Screws.
 23. Assemble the three Restriction Rings, separated by the two Spacer Centers. Follow with the Spacer End.
 24. Slide the Packing Nut over the Body Stem and make it up to the Control Cage upper end.
 25. Insert and tighten the Packing Nut Lock Screw.
 26. Assemble the Head onto the Body Stem. Make it up until the slot in the Body Stem aligns with the slot in the Head, then insert the Locking Key and secure it with the Locking Key Screws.
- This completes assembly of the tool. The tool should be checked after assembly to assure that:
- A. The Friction Blocks do not bind and will deflect and extend freely.
 - B. The Slips may be extended and retracted by manipulating the Body Stem (and Tapered Slip Cone).
 - C. The Centralizing Lugs from the correct diameter for operation in the washpipe to be run.
 - D. The Friction Blocks are matched to the washpipe to be run.
 - E. The Slips will catch properly in the washpipe to be run and will completely release when retracted.
- The most convenient way to check the items listed above, is to use a "try nipple" several feet long, cut from a length of washpipe to be run.

Assembly of Oversize Washpipe

The Bowen-Lebus Anchor Washpipe Spear may be easily and quickly dressed for different sizes of washpipe. Only four sets of parts need be changed: Restriction Ring, Friction Blocks, Slips, and Centralizing Lugs.

The Restriction Rings should be in all cases, be 1/16" smaller than the inside diameter of the washpipe in which they operate.

To replace the Restriction Rings, remove the Packing Nut Lock screw, and back off the Packing Nut Lock screw, and back off the Packing Nut until the Spacer End and Spacer Centers move apart sufficient to allow the split cross-cut Restriction Rings to be removed and replaced. The Packing Nut may then be retightened and the Packing Nut screw re-set.

To replace the Slips, loosen and remove the Slip Screws. The Slips may then be pulled out of the windows. Use caution to assure that the Slip Springs are not lost or harm done to the operator as the Slips are removed.

When the tool is dressed with different size Slips, be sure to use properly matched corresponding number Centralizing Lugs, Friction Blocks and Restriction Rings. All should be marked with the same size number as the Slips.

To replace the Friction Blocks, remove the Friction Block Screws at one end and loosen the Screws at the other. Use caution not to lose the Friction Block Springs or be harmed by them in the process.

The Centralizing Lugs may be changed by removing the Screws and pulling the Centralizing Lugs out with large pliers. The new Lugs may be inserted and locked with the Screws. If difficulty is experienced in getting the Lugs in the slots, dress the edges of the slots and Lugs with a small hand file.

Bowen-Lebus Anchor Washpipe Spears

Tool No.	JCF-23	JCF-24	JCF-25	JCF-26	JCF-27	JCF-28	JCF-29
Body O.D.	3-1/4	4	4-9/16	5-7/16	5-13/16	6-7/16	8-1/4
Connections	2-3/8 Reg.	2-3/8 IF	2-7/8 IF	3-1/2 IF	4-1/2 FH	4-1/2 FH	5-1/2 Reg
I.D.	3/4	1	1-1/8	1-1/4	1-3/4	2	2
Complete Assembly	Part No.	38139	38189	38224	38260	38299	38337
	Weight	85	145	185	280	330	410
							480

Calculated Strengths

Tensile Strength @ Yield in lbs	93,000	192,732	279,480	487,320	553,200	822,960	822,960
Torque Strength @ Yield in ft-lbs	1,063	3,023	5,633	11,346	14,000	24,934	24,934
Recommended Maximum* Pull in lbs	61,400	127,000	184,300	322,000	364,000	543,000	543,000

* Based on 66% of calculated yield strength

NOTE: These calculations are based on the yield strength of the material.
They are theoretical, and do not constitute any guarantee, actual or implied.

Bowen-Lebus Anchor Washpipe Spear

Tool No.		JCF-23	JCF-24	JCF-25	JCF-26	JCF-27	JCF-28	JCF-29
Body O.D.*		3-1/4	4	4-9/16	5-7/16	5-13/16	6-7/16	8-1/4
Connections		2-3/8	2-3/8	2-7/8	3-1/2	4-1/2	4-1/2	5-1/2
		Reg	IF	IF	IF	FH	FH	Reg
I.D.		3/4	1	1-1/8	1-1/4	1-25/32	2	2
Lebus Part No.	Complete Assembly	Part No.	38139	38189	38224	38260	38337	38550
		Weight	85	145	185	280	330	480
1	Head	Part No.	38140	38190	38225	38261	38300	38338
		Weight	25	26	30	40	55	75
1-A	Locking Key	Part No.	38141	38191	38226	38262	38301	38339
		Quantity	4	4	4	2	2	2
1-B	Locking Key Screw	Part No.	38142	38192	38227	38263	38302	38340
		Weight	14	36	55	110	130	170
F-25	Body Stem	Part No.	38143	38193	38228	38264	38303	38341
		Weight	4	5	6	7	9	10
F-26	Packing Nut	Part No.	38144	38194	38229	38265	38304	38342
		Weight	1/4	1/4	1/4	1/4	1/4	1/4
F-28	Packing Nut Lock	Part No.	38145	38195	38230	38305	38305	38343
		Weight	3	3	3	3	3	3
4	Restriction Rings *	Part No.	38146	38196	38231	38267	38306	38344
		Weight	1	1-1/2	2	2-1/2	3	3-1/2
4-A	Spacer End	Part No.	38147	38197	38232	38268	38307	38345
		Weight	3/4	1	1-1/4	1-1/2	1-3/4	3
4-B	Spacer Centers (2 Req'd.)	Part No.	38148	38198	38233	38269	38308	38346
		Weight	20	50	60	65	70	80
F-29	Control Cage	Part No.	38149	38199	38234	38270	38309	38347
		Weight	125	125	125	125	125	125
5	Friction Blocks	Part No.	38150	38200	38235	38271	38310	38348
		Weight	3	3	3	6	6	6
5-A	Friction Block Spring	Part No.	38151	38201	38201	38201	38201	38201
		Quantity	9	9	12	24	24	24
5-B	Friction Block Screw	Part No.	38152	38202	38237	38273	38312	38350
		Weight	1/2	3/4	1-1/4	1-3/4	2-1/4	3-1/2
F-30	Bearing	Part No.	38153	38203	38240	38276	38315	38351
		Weight	1/16	1/16	1/16	1/8	1/8	1/8
F-31	Bearing Screw (6 Req'd.)	Part No.	38154	38204	38241	38277	38316	38354
		Weight	1/4	1/4	1/4	3/8	3/8	1/2
F-32	Control Cage Latch	Part No.	38155	38205	38242	38278	38317	38355
		Weight	1/16	1/16	1/16	1/16	1/16	1/16
F-33	Latch Pin Screw (2 Req'd.)	Part No.	38156	38206	38243	38279	38318	38356
		Weight	3/4	3/4	1	1	1-1/4	1-1/4
7-A	Latch Pin	Part No.	38157	38207	38244	38280	38319	38357
		Weight	3/4	3/4	1	1	1-1/4	1-1/4

* Restriction Rings OD should be 1/16" smaller than the washpipe ID being used.

Bowen-Lebus Anchor Washpipe Spear

Lebus Part No.	Tool No.		JCF-23	JCF-24	JCF-25	JCF-26	JCF-27	JCF-28	JCF-29
	Complete Assembly	Part No.	38139	38189	38224	38260	38299	38337	38550
F-34	Latch Spring (2 Req'd.)	Part No.	38157	38208	38208	38318	38318	38318	38318
		Weight	1/8	1/8	1/8	1/8	1/8	1/8	1/8
F-35	Latch Cover	Part No.	38158	38209	38244	38280	38319	38357	38559
		Weight	3/4	1	1-1/2	2	3	3	4
F-36	Latch Cover Screw (4 Req'd.)	Part No.	25214	23125	23125	23139	25220	25220	25220
		Weight	1/16	1/16	1/16	1/8	1/8	1/8	1/8
F-37	Ball Latch (8 Req'd.)	Part No.	38159	38210	38245	38320	20936	20936	38320
		Weight	1/16	1/16	1/8	3/16	3/16	3/16	3/16
F-38	Ball Latch Release Cage	Part No.	38160	38211	38246	38282	38321	38359	38359
		Weight	7	12	15	28	30	33	40
F-42	Tapered Slip Cone	Part No.	38163	38214	38250	38285	38324	38362	38563
		Weight	2-1/4	2-1/4	2-1/2	2-1/2	3	5	6
12	Slip (6 Req'd.)	Part No.	38164	38215	38251	38286	38325	38363	38564
		Weight	2	2	2-1/4	2-1/2	3	4	6
12-A	Slip Screw (6 Req'd.)	Part No.	38165	38165	38165	38165	38165	38165	38165
		Weight	1/8	1/8	1/8	1/8	1/8	1/8	1/8
12-B	Slip Spring (6 Req'd.)	Part No.	38166	38253	38253	38288	38288	38288	38288
		Weight	1/8	1/8	1/8	1/8	1/8	1/8	1/8
F-43	Slip Cage Spring	Part No.	38167	38218	38254	38289	38328	38366	38366
		Weight	1/4	1/4	5/16	3/8	7/16	1/2	1/2
F-44	Spring Cover	Part No.	38168	38219	38255	38290	38329	38367	38367
		Weight	1/2	2-1/4	3-1/4	5	11	13	13
14	Bottom Sub	Part No.	38169	38220	38256	38291	38330	38368	38566
		Weight	30	30	42	47	95	72	150
14-A	Centralizing Lug	Part No.	38170	38221	38257	38292	38331	38567	38567
		Quantity	4	4	5	5	5	5	5
		Weight	1/4	3/8	1/2	1/2	1/2	1/2	1/2
14-B	Centralizing Lug Screw	Part No.	6964	6964	6964	38293	6964	22830	22830
		Quantity	4	4	5	5	5	5	5
		Weight	1/16	1/16	1/16	1/16	1/16	1/16	1/16
15	Choke **	Part No.	—	—	—	—	38332	38369	38369
		Weight	—	—	—	—	1-1/2	1-1/2	1-1/2
F-45	Allen Wrench (6 Sizes Req'd.)	Part No.	—	—	—	—	—	—	—
		Weight	—	—	—	—	—	—	—
F-46	Choke Wrench	Part No.	—	—	—	—	38334	38334	38334
		Weight	—	—	—	—	1/4	1/4	1/4
F-47	Break Out Lug	Part No.	38171	38222	38258	38294	38333	38333	38568
		Weight	1/4	1/4	1/4	1/4	1/4	1/4	1/4
F-48	Locking Key Puller	Part No.	42580	42580	42579	38172	38172	38172	38172
		Weight	3/4	3/4	3/4	3/4	3/4	3/4	3/4
F-50	Locking Key Puller Screw	Part No.	14744	14744	8229	15553	15553	15112	15112
		Weight	1/8	1/8	1/8	1/8	1/8	1/8	1/8
F-39	Joint Lock Screw (2 Req'd.)	Part No.	23124	23125	38247	25220	25220	25220	23138
		Weight	1/32	1/32	1/32	1/32	1/32	1/32	1/32
F-40	Ball Latch Cage	Part No.	38161	38212	38248	38283	38322	38360	38561
		Weight	3-1/2	5-1/4	11-1/2	17	18	20	25
F-41	Slip Cage	Part No.	38162	38213	38249	38284	38323	38361	38562
		Weight	6	12-1/4	13	15	17	32	40
	Ball Race for Control Cage	Part No.	38149	38199	38234	38270	38309	38347	38347
		Weight	1	1-1/8	1-1/4	1-1/2	1-1/2	2	2
	Bearing Support	Part No.	—	—	—	—	—	38352	38352
		Weight	—	—	—	—	—	1	1
	Ball Race Retainer Screw	Part No.	23328	23328	23328	23328	23328	17762	17762
		Weight	1/32	1/32	1/32	1/32	1/32	1/32	1/32

** Choke ID to be less than area between washpipe and well bore, or the area between washpipe and drill collars.

Bowen-Lebus Anchor Washpipe Spear

Tool No.	Body OD	Connections	Hole Size	Min. Weight*	Slip number and the minimum and maximum inside diameter of washpipe each slips will catch.						
JCF-23	3-1/4	2-3/8 API Reg	3/4	85	Slip 31 3-3/8 to 3-9/16	Slip 32 3-9/16 to 3-3/4	Slip 33 3-3/4 to 3-15/16	Slip 34 3-15/16 to 4-1/8	Slip 35† 4-5/16 to 4-5/16		
JCF-24	4	2-3/8 API IF 4-5/16	1 4-9/16	145 4-13/16	Slip 41 4-1/8 to 5-1/16	Slip 42 4-5/16 to 5-5/16	Slip 43 4-9/16 to 4-13/16	Slip 44 4-13/16 to 5-1/16	Slip 45† 5-1/16 to 5-5/16		
JCF-25	4-9/16	2-7/8 API IF	1-1/8	185	Slip 50 4-11/16 to 4-15/16	Slip 51 4-15/16 to 5-3/16	Slip 52 5-3/16 to 5-7/16	Slip 53 5-7/16 to 5-11/16	Slip 54 5-11/16 to 5-15/16	Slip 55† 5-15/16 to 6-3/16	
JCF-26	5-7/16	3-1/2 API IF	1-1/4	280	Slip 60 5-9/16 to 5-3/4	Slip 61 5-5/8 to 5-7/8	Slip 62 5-7/8 to 6-1/8	Slip 63 6-1/8 to 6-3/8	Slip 64 6-3/8 to 6-5/8	Slip 65 6-5/8 to 6-7/8	Slip 66 6-7/8 to 7-1/8
JCF-27	5-13/16	4-1/2	1-25/32 API FH		Slip 71 6 to 6-5/16	Slip 71.5 6-1/16 to 6-3/8	Slip 72 6-5/16 to 6-5/8	Slip 72.5 6-3/8 to 6-11/16	Slip 73 6-5/8 to 6-15/16	Slip 73.5 6-11/16 to 7	Slip 74 6-15/16 to 7-1/4
					330 7 to 7-5/16	Slip 74.5 7-1/4 to 7-9/16	Slip 75 7-9/16 to 7-7/8	Slip 76 7-13/16 to 8-1/8	Slip 77 8-1/8 to 8-7/16	Slip 78 8-11/16 to 8-15/16	Slip 79
JCF-28	6-7/16	4-1/2 API FH	2	410	Slip 80 6-9/16 to 6-13/16	Slip 81 6-11/16 to 6-15/16	Slip 82 6-15/16 to 7-3/16	Slip 83 7-3/16 to 7-7/16	Slip 84 7-7/16 to 7-11/16	Slip 85 7-11/16 to 7-15/16	Slip 86 7-15/16 to 8-3/16
					Slip 87 8-3/16 to 8-7/16	Slip 88 8-7/16 to 8-11/16	Slip 89 8-11/16 to 8-15/16				
JCF-29	8-1/4	5-1/2 API Reg	2	480	Slip 91 8-1/2 to 8-3/4	Slip 92 8-3/4 to 9	Slip 93 9 to 9-1/4	Slip 94 9-1/4 to 9-1/2	Slip 95 9-1/2 to 9-3/4	Slip 96 9-3/4 to 10	

* With small size slips, etc. Crating not included.

† Special size not usually carried in stock.

How To Order

Specify:

- (1) Complete assembly number
- (2) Slip size by size number
- (3) Body size OD only
- (4) Spare parts desired

NOTE: Friction blocks, restriction rings, and centralizing lugs must be changed with slips.

RECOMMENDED SPARE PARTS

- 4 – Sets (24), Part No. 12, Slips
- 4 – Sets (12), Part No. 4, Restriction Rings
- 1 – Set (3), Part No. 5, Friction Blocks
- 2 – Sets (8), Part No. 14-A, Centralizing Lugs
- 2 – Sets (4), Part No. 1-B, Locking Key Screws
- 2 – Sets (4), Part No. 1-A, Locking Keys
- 2 – Sets (18), Part No. 5-A, Friction Block Springs
- 2 – Sets (12), Part No. 5-B, Friction Block Screws
- 2 – Part No. F-30, Bearings
- 2 – Part No. F-32, Control Cage Latches
- 2 – Sets (4), Part No. F-33, Latch Pin Screws
- 4 – Part No. 7-A, Latch Pins
- 6 – Sets (12), Part No. F-34, Latch Springs
- 4 – Sets (8), Part No. F-39, Joint Lock Screws
- 4 – Sets (24), Part No. 12-A, Slip Screws
- 4 – Sets (24), Part No. 12-B, Slip Springs
- 2 – Sets (16), Part No. F-37, Ball Latch
- 1 – Part No. F-42, Tapered Slip Cone
- 1 – Part No. F-28, Packing Nut Lock Screw
- 1 – Set (6), Part No. F-31, Bearing Screws
- 1 – Set (4), Part No. F-36, Latch Cover Screws
- 1 – Set (4), Part No. 14-B, Centralizing Lug Screws

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* Denotes Manufacturing and Engineering facilities

Downhole Solutions

Drilling Solutions

Engineering and Project Management Solutions

Lifting and Handling Solutions

Production Solutions

Supply Chain Solutions

Tubular and Corrosion Control Solutions

Well Service and Completion Solutions